REMARKS/ARGUMENTS

Favorable reconsideration of this application, as presently amended and in light of the following remarks, is respectfully requested.

Claims 1-43 are pending; and Claims 11, 42, and 43 are amended.

Changes to Claims 11, 42, and 43 are cosmetic as a matter of form. Thus, the changes to the claims add no new matter. Additionally, as the changes to the claims are merely cosmetic and do not raise any new issues requiring further search and consideration, Applicant respectfully requests entry of the Amendment.

The outstanding Official Action rejected Claims 11, 42, and 43 under 35 U.S.C. § 101; and rejected Claims 1-43 under 35 U.S.C. § 103(a) as unpatentable over U.S. Patent Application Publication No. 2004/0233855 to Gutierrez et al. (hereinafter "Gutierrez") and U.S. Patent Application Publication No. 2004/0029533 to Cain.

Claims 11, 42, and 43 are amended to recite a "non-transitory computer readable storage medium." Accordingly, Applicant submits that Claims 11, 42, and 43 recite statutory subject matter. Thus, Applicant respectfully requests that the rejection of Claims 11, 42, and 43 be withdrawn.[1]

Applicant respectfully traverses the rejection of the claims under 35 U.S.C. § 103(a).

Claim 1 is directed to a communication system which comprises a plurality of communication terminals, and based on a message originated from a first communication terminal to a third communication terminal via a second communication terminal, the second and third communication terminals create a route to the first communication terminal and communication is made between the first and third communication terminals via the created route. The second and third communication terminals comprise, *inter alia*, "route creation

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[1] Applicant submits these changes relate to USPTO formalities only. More specifically, the "non-transitory" claim term is a limitation of the medium itself (i.e., a tangible medium instead of a signal) as opposed to a limitation on data storage persistency (e.g., RAM vs. ROM).

means for creating a plurality of the routes to the first communication terminal by duplicatively receiving the message."

The outstanding Official Action acknowledges that <u>Gutierrez</u> fails to disclose or suggest these features.[2] The outstanding Official Action relies on <u>Cain</u> to cure the deficiencies of <u>Gutierrez</u>.

<u>Cain</u> describes a system for distributing duplicate message data along a plurality of discovered routes.[3] Figure 1 of <u>Cain</u> illustrates an ad-hoc network 20 that includes a plurality of mobile nodes 30 including a source node 1, a destination node 4, and intermediate nodes 2, 3, and 5.[4] <u>Cain</u> describes that when a new route is needed to a given destination node 4, the source node 1 broadcasts a route request RREQ packet to the destination node, where each intermediate node 2, 3, and 5 determines whether the node can support the route request RREQ, and appropriately forwards the request RREQ to the destination node 4.[5]

<u>Cain</u> also describes that the destination node 4, upon receiving the route request RREQ, generates a reply RREP to the source node 1 for each discovered route such as routes 1-2-4 or 1-3-5-4.[6] As illustrated in Figure 5 of <u>Cain</u>, once the routes have been discovered, the source node 1 distributes the message data to the destination node 4 along the plurality of discovered routes, such as routes 1-2-4 and 1-3-5-4.[7]

The outstanding Official Action asserts that the feature of distributing duplicate message data along the plurality of discovered routes, as described in <u>Cain</u>, is equivalent to "route creation means for *creating a plurality of routes* to the first communication terminal by *duplicatively receiving the message*," as recited in Claim 1.[8] However, as illustrated above, the routes of <u>Cain</u> are discovered *prior* to distributing the duplicative message data

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[2] See Official Action of March 31, 2010 at page 6.
[3] See <u>Cain</u> at para. [0014].
[4] See <u>Cain</u> at para. [0027] and Fig. 1.
[5] See <u>Cain</u> at paras. [0027] and [0028].
[6] See <u>Cain</u> at para. [0029].
[7] See <u>Cain</u> at para. [0032] and Fig. 5.
[8] See Official Action of March 31, 2010 at page 6. (Emphasis added).

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over the discovered routes of <u>Cain</u>. That is, the plurality of routes in <u>Cain</u> are ***not discovered by distributing the duplicative message data*** of <u>Cain</u>.

Additionally, while <u>Cain</u> describes broadcasting a RREQ packet from the source node 1 to the destination node 4 via the intermediate nodes 2, 3, and 5, <u>Cain</u> fails to disclose or suggest duplicatively receiving the RREQ packet. That is, <u>Cain</u> merely describes transmitting the request RREQ packet from the source node 1 to the destination node 4, and vice versa regarding the reply RREQ packet, without that request RREQ packet being ***duplicatively received*** at any node.

Accordingly, Applicant submits that <u>Cain</u> fails to disclose or suggest "route creation means for creating a plurality of routes to the first communication terminal by duplicatively receiving the message," as recited in Claim 1. Applicant respectfully requests that the rejection of Claim 1, and claims depending therefrom, under 35 U.S.C. § 103(a) be withdrawn.

As independent Claims 3, 10-14, 19, 22, 25, and 26 recites features analogous to Claim 1, Applicant submits that <u>Gutierrez</u> and <u>Cain</u> fail to teach or suggest all the features of these independent claims. Accordingly, Applicant respectfully requests that the rejection of independent Claims 3, 10-14, 19, 22, 25, and 26, and claims depending therefrom, under 35 U.S.C. § 103(a) be withdrawn.

Claim 27 is directed to a communication system including a plurality of communication terminals, and based on a message originated from a first communication terminal to a third communication terminal via a second communication terminal, creates routes to the first communication terminal by using the second and third communication terminals to communicate between the first and third communication terminals via the created route. Claim 27 recites, *inter alia*, that "the second communication terminal has state notification means for detecting a possible disconnection state in terms of a disconnection

symptom for communication on the route as an upstream side for the message and notifying

the possible disconnection state to the first communication terminal."

Now turning to the applied reference, Figure 5 of Gutierrez illustrates an example

typology of an ad-hoc communication network 23, which includes a single network

coordinator (NC) 24 and network devices (ND) 1-11.[9] Gutierrez describes the following

upstream and downstream transfer types:

> Referring to FIG. 5, on every message transfer, each
> message, such as 32, contains a field 34 that allows the ND 14
> to recognize the two types of transfer: *(1) upstream transfer 36*
> *(i.e., from the particular ND 14 to the NC 24); or (2)*
> *downstream transfer 38 (i.e., from the NC 24 to the particular*
> *ND 14).*[10] (Emphasis added).

Particularly, as described above, an upstream transfer occurs when a message is

transferred from any particular ND14 to the NC 24, and a downstream transfer occurs when a

message is transferred from the NC 24 to any particular ND 14. Gutierrez further describes

that in an upstream transfer mode, a source route is created between the ND 14 and the NC

24.[11] Gutierrez further describes that in the downstream transfer mode, since the NC 24

knows at least one route to each ND 14, the NC 24 may select the optimum way to transfer

data to a final ND 14.[12]

If a particular network device is unable to relay a message, Gutierrez describes the

following process for sending a route error message:

> If one of the NDs 14 (e.g., ND7) is not able to relay a
> message for any reason (e.g., link down; routing table 30
> exhausted), *the ND 14 sends back a special "Route Error"*
> *message 58, which informs the preceding ND 14 (e.g., ND9)*
> *(or the NC 24) that the routing operation failed.* In this
> instance, the routing method is complementary relative to the
> message source *(e.g., if a message employing "downstream*
> *transfer" causes an error, then the Route Error message is*

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[9] See Gutierrez at paras. [0045], [0046], and [0064], [0078], and Fig. 3.
[10] See Gutierrez at para. [0078].
[11] See Gutierrez at para. [0079].
[12] See Gutierrez at para. [0081].

> *sent back via the "upstream transfer" mode).* The failure of
> one ND 14 to acknowledge a "Route Error" message causes the
> relaying node to discard the packet. A node that could not
> relay a "Route Error" message does not send back another
> "Route Error" message, since that would create a loop
> condition.[13] (Emphasis added).

Claim 27 is distinguishable over <u>Gutierrez</u> as the applied reference fails to disclose or

suggest "notification means for detecting a possible disconnection state in terms of a

disconnection symptom for *communication on the route as an upstream side for the*

message." (Emphasis added). The outstanding Official Action identifies the route error

message of <u>Gutierrez</u> as the claimed "notification means."[14] However, as illustrated above,

<u>Gutierrez</u> merely describes that the route error message is employed in a downstream transfer

mode rather than an upstream transfer mode.[15] <u>Gutierrez</u> neither discloses nor suggests that

the network illustrated in Figure 5 of <u>Gutierrez</u> is configured to send a route error message

when a message is transferred using the upstream transfer mode. Particularly, as discussed

above, <u>Gutierrez</u> merely describes that the upstream transfer mode is used to create a source

route.[16] Therefore, since the upstream transfer mode is used to create a source route, there is

no need in <u>Gutierrez</u> to generate a route error message in the upstream transfer mode because

there is no created source route.

Applicant has considered <u>Cain</u>, and submits that <u>Cain</u> fails to cure the deficiencies of

<u>Gutierrez</u>. Accordingly, Applicant submits that <u>Gutierrez</u> and <u>Cain</u> fail to disclose or suggest

all the features of Claim 27. Applicant respectfully requests that the rejection of Claim 27,

and claims depending therefrom, under 35 U.S.C. § 103(a) be withdrawn.

As independent Claims 33, 36, 37, and 41-43 recite features analogous to Claim 27,

Applicant submits that <u>Gutierrez</u> and <u>Cain</u> fail to disclose or suggest all the features of these

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[13] See <u>Gutierrez</u> at para. [0083].
[14] See Official Action of March 31, 2010 at page 19.
[15] See <u>Gutierrez</u> at para. [0083].
[16] See <u>Gutierrez</u> at para. [0079].

independent claims. Accordingly, Applicant respectfully requests that the rejection of

independent Claims 33, 36, 37, and 41-43, and claims depending therefrom, under 35 U.S.C.
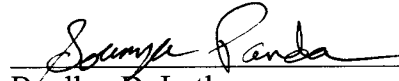
§ 103(a) be withdrawn.

Consequently, in view of the above amendments and present remarks, no further

issues are believed to be outstanding, and the present application is believed to be in

condition for formal allowance. A notice of allowance is earnestly solicited.

Respectfully submitted,

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